

Remarks and Arguments

Claims 1-11 and 44-54 have been presented for examination. Claims 1 and 44 have been amended.

Claims 1-11 and 44-54 have been rejected under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,460,082 (Lumelsky) in view of U.S. Patent No. 6,157,927 (Schaefer.) The examiner comments that the Lumelsky patent discloses all of the claimed elements with the exception that it does not disclose the recited switch fabric. However, the examiner asserts that the Schaefer reference discloses an equivalent to a switch fabric. The examiner concludes that it would have been obvious to combine the teachings of Lumelsky and Schaefer because both references are in the same field of endeavor.

The present invention relates to a method and apparatus for providing data storage services to users from a pool of storage resources. The users are connected to access interfaces which are, in turn, connected to the pool of resources by a switch fabric. The access interfaces communicate with each client with the client protocol in order to receive service requests and data to be stored from that client. The access interfaces then communicate with the storage resources in the resource pool and, based on the workload of each resource in the resource pool, select the subset of the resource pool to use for any given storage transaction and to distribute the workload. The result of this operation is that data may be stored in a storage resource other than the storage resource from which that data was retrieved.

The Lumelsky reference discloses a distributed multimedia system in which clients receive streaming multimedia information from a distributed pool of multimedia servers. In this system, the direction of data flow is from server to client. No data is received from clients and transferred to the multimedia servers and stored thereon.

The Schaefer reference discloses a distributed processing system which operates with different transaction protocols. Two programs called a connection manager and a resource manager are used to translate between the two protocols. However, the operation of the Schaefer system indicates that it uses conventional database transaction processing in which information is retrieved from, and stored back

into, the same database location. Specifically, the storage location is determined by the storage address and not by the workload of the storage resources.

The claims have been amended to particularly point out the differences between the present system and the cited references. For example, claim 1 now recites, in lines 4-14, "...an access interface module which receives data storage requests and data to be stored from the client and, in response to each service request and based on a workload instead of an address of each of the plurality of resources, dynamically selects a subset of the plurality of storage resources to which the data is transferred to be stored and to distribute the workload across the plurality of storage resources; and a switch fabric for temporarily connecting the access interface module to the selected subset of the plurality of storage resources so that the data can be transferred to the selected subset of storage resources ..." (emphasis added). As discussed above, in the Lumelsky system, data is transferred from the servers to the client not from the client to the servers. Thus, Lumelsky does not teach or suggest the recited access module that receives data from a client and selects storage resources to which the data is transferred based on the workloads of the resources. In the Schaefer system the resources to which data is transferred are selected by address not by workload as claimed. Thus, the combination of Lumelsky and Schaefer references proposed by the examiner cannot teach or suggest the structure recited in claim 1 because neither references teaches this structure. Therefore, claim 1 patentably distinguishes over the cited reference combination.

Claims 2-11 are dependent, either directly or indirectly, on amended claim 1 and incorporate the limitations thereof. Therefore, they also distinguish over the cited reference combination in the same manner as amended claim 1.

Method claim 44 contains limitations that parallel those in apparatus claim 1 and has been amended in a manner that parallels that of claim 1. Thus, amended claim 44 patentably distinguishes over the cited reference combination in the same manner as claim 1. Claims 45-54 are dependent, either directly or indirectly, on amended claim 44 and incorporate the limitations thereof. Therefore, they also distinguish over the cited reference combination in the same manner as amended claim 44.

In light of the forgoing amendments and remarks, this application is now believed in condition for allowance and a notice of allowance is earnestly solicited. If the examiner has any further questions regarding this amendment, he is invited to call applicants' attorney at the number listed below. The examiner is hereby authorized to charge any fees or direct any payment under 37 C.F.R. §§1.17, 1.16 to Deposit Account number 50-3969.

Respectfully submitted

/paul e. kudirka/ Date: 2007-04-27
Paul E. Kudirka, Esq. Reg. No. 26,931
LAW OFFICES OF PAUL E. KUDIRKA
Customer Number 64967
Tel: (617) 357-0010 Fax: (617) 357-0035